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**SYSTEMS AND METHODS FOR IMPROVED MEDIUM ACCESS CONTROL
MESSAGING**

ABSTRACT

Systems and methods for communicating medium access control (MAC) data without errors. Different encoding processes may be used to encode MAC data and data unrelated to MAC. The encoding processes used for MAC data employ more redundancy and are therefore capable of transmitting data without errors in more severe conditions than the encoding processes used for non-MAC data. Both MAC data and non-MAC data may be represented as a series of so-called symbols where each symbol is a complex value used to modulate a sinusoidal carrier signal. MAC data transmissions may employ a set of symbols having more widely spaced complex values than the symbol set used for non-MAC data transmissions. While the receiver is receiving MAC data, it may more easily distinguish which symbols have been sent, even when the symbols have been heavily corrupted with noise and interference. Thus network operation may be properly coordinated even in the presence of severe degradation of data transmission quality.

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